

St. Anthony Street Bridge
Legislative Route 59024, Section 007
Spanning Buffalo Creek
Lewisburg Borough/Kelly Township
Union County
Pennsylvania

HAER No. PA-99

HAER,
PA,
60-LE00b,
1--

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
MID-ATLANTIC REGION, NATIONAL PARK SERVICE
DEPARTMENT OF THE INTERIOR
PHILADELPHIA, PENNSYLVANIA 19106

HAER
PA,
60-LEWB,
1-

HISTORIC AMERICAN ENGINEERING RECORD

St. Anthony Street Bridge

HAER No. PA-99

Location: Spanning Buffalo Creek on Legislative Route 59024, Section 007, Lewisburg Borough and Kelly Township, Union County, Pennsylvania

UTM: 341590.4536860
Quad: Northumberland, PA

Date(s) of Construction: 1889; a new timber deck and stringers were added in 1937 and a timber deck again in 1961. The south abutment was jacketed in concrete in 1982.

Builder: The Champion Bridge Company of Wilmington, Ohio

Present Owner: Pennsylvania Department of Transportation
Transportation and Safety Building
Harrisburg, Pennsylvania 17120

Present Use: Vehicular and pedestrian bridge

Significance: The St. Anthony Street Bridge is significant in the areas of engineering and transportation, specifically for its age, size, length of truss for this age, and builder. The Champion Bridge Company is one of the nation's oldest bridge-building firms still in business today. In addition, the existing stone masonry abutments were built to support earlier wooden bridges. The bridge has been determined eligible for the National Register of Historic Places.

Project Information: The St. Anthony Street Bridge was documented by Yule, Jordan Associates (Camp Hill, Pennsylvania) for the Pennsylvania Department of Transportation in 1986. The project team consisted of Nathan D. Wilson, Project Bridge Engineer; Neill G. Erikson, Project Design Engineer; Christine Corbe', Historian; and Laurence Mohar, Photographer. The documentation was undertaken to fulfill the Memorandum of Agreement, which requires recordation as a mitigative measure before demolition of the structure.

Edited and
Transmitted by: Jean P. Yearby, HAER, 1987

PART I. HISTORICAL INFORMATION

A. Physical History

The St. Anthony Street Bridge over Buffalo Creek was built in 1899 by the Champion Bridge Company of Wilmington, Ohio, for the Union County Commissioners. The superstructure was constructed on previously-built stone masonry abutments approximately 350 feet north of the creek's confluence with the west branch of the Susquehanna River. After a flood washed away an earlier bridge, the abutments were repaired (Union County Road Book 1899: 242) and the current bridge was completed in November (Lewisburg Chronicle, November 21, 1889).

Constructed for a total contract price of \$4,408, the bridge eventually was turned over to the State, possibly by a legislative act effective June 1, 1930. Through this act, the Pennsylvania Department of Highways took over all bridges on state highway routes.

The following repairs were recorded for the bridge in the 1979 Inspection Report (Pennsylvania Department of Transportation):

- 1937 - New stringers and timber deck
- 1938 - Painting
- 1957 - Painting
- 1961 - New timber deck
- 1969 - Painting
- 1971 - Flame shortening

Repairs completed since the 1979 Inspection Report include the following:

January 22, 1981	Flame shortening	\$9,000
1982	Jacket Abutment Backwall (south abutment)	\$3,504
March 14, 1983	Flame shortening	\$ 500
June 10, 1983	Flame shortening, Bearings	\$1,491

B. Historical Context

1. History of the Crossing

Where Buffalo Creek flows east into the west branch of the Susquehanna River, the land has been known since historic times as "Delta Place." Indians first used the land as a hunting ground. After European contact, white settlers moved farther into the interior. The first survey in the Buffalo Valley, as the region was called, was made for the Reverend John Ewing by William Maclay on February 22, 1769. Only a few days later, on February 28, the site of Lewisburg was surveyed for the Penns (Reed, n.d.).

A ferry established by Flaven Roan just north of the mouth of Buffalo Creek expedited travel to the north past Delta Place (FHWA 1984 Cultural Resources Survey). Buffalo Valley farm produce was transported from the western interior to Lewisburg, where it was taken onto flat boats and floated south on the river to Baltimore (Reed, n.d.).

Ludwig Derr set up a sawmill at the site of Lewisburg between 1770 and 1771. Afterward, he opened a grist mill and trading post. As more settlers arrived, they cleared the land and began farming. In 1785, Derr laid out the plan for the town of Lewisburg, then called Derr's Town (FHWA 1984 Cultural Resources Survey). The town was incorporated in 1812 (Mauser 1886).

It is known that a bridge spanning Buffalo Creek was built before 1794, when repairs were made to the "old bridge." One of the first covered bridges in Union County was built over Buffalo Creek as early as 1809. Erected by James Moore II, it was located at the foot of St. Anthony Street (FHWA 1984 Cultural Resources Survey).

First a highway, then a canal bypassed Lewisburg on the east side of the Susquehanna River. But the town refused to become a sleepy village cut off from primary transportation networks. When the Pennsylvania Canal went through in 1828, Lewisburg business owners petitioned the State legislature to build a cross-cut canal a few hundred yards south of the present Susquehanna River Bridge. The first canal boat crossed the river in December 1833. As a major commercial artery, it provided an economic stimulus to Lewisburg. The Lewisburg to Mifflinburg turnpike, built circa 1830 when Lewisburg had a population of 924, offered another boost to settlement and trade (FHWA 1984 Cultural Resources Survey).

It appears that Moore's covered bridge across Buffalo Creek stood until October 9, 1847, when "the west half of the bridge was carried away by a flood and lodged against the River Bridge." A bridge existing at the mouth of the creek was removed in April 1951, and a new one was built (FHWA 1984 Cultural Resources Survey). However, the new structure burned in 1853 (Snyder 1976). Maps of 1856 and 1868 and an 1884 oblique view all show a bridge at the St. Anthony Street location (FHWA 1984 Cultural Resources Survey). The 1884 oblique view depicts it as a covered bridge with double entrances.

A boat yard had been associated with the bridge since the mid-19th century. By that time, Lewisburg had become a stop for logs rafted down river from the huge boom at Williamsport (Snyder 1976). Often tied together into rafts for floating downstream, logs were used by the boat yard for lumber (Linn 1986). Colonel Eli Slifer and his partner, William Frick, had moved their boat yard to Lewisburg in 1850,

completing it in 1852. Although their mill burned in 1853, the same year the bridge burned, it was rebuilt immediately. In 1868, the boat yard was shown operating on the south side of Buffalo Creek on both sides of St. Anthony Street. By 1886, it was known as P. Billmeyer and Company, employed 100 workers, and produced finished lumber and river bridges (FHWA 1984 Cultural Resources Survey; Mauser 1886)

In 1869, the first railroad, the Center and Spruce Creek, had been built through Lewisburg. Ten years later, the name changed to the Lewisburg and Tyrone Railroad and was owned by the Pennsylvania Railroad (Mauser 1886). Before the railroad was constructed, the region had depended on Lewisburg as a market because it was the only town on the west side of the river to have canal transportation. During the winter, sleds brought grain into Lewisburg for shipment elsewhere, since little could be processed in town. Local businesses depended on selling finished goods and coal to the outlying areas. When the railroad came through, warehouses were built along it, and Lewisburg lost the grain business for several years. But when two steam-powered flour mills were built, the railroad began bringing grain to Lewisburg for processing. It was an innovation that revolutionized the grain trade (Mauser 1886).

The connection to the Reading Railroad, provided by the Shamokin, Sunbury and Lewisburg Railroad in 1882, linked Lewisburg to New York City and the West. According to a contemporary historian, this advance awakened a spirit of enterprise that soon brought to the town a number of manufacturers and created such a revival as was never heard of or felt during any time in the town's previous history" (Mauser 1886).

Although population of the borough actually dropped from 3,121 in 1870 to 3,080 in 1880, the decrease was reported to be largely due to a general business depression and the burning of a Lewisburg foundry that employed a large number of people (Mauser 1886).

By 1886, a year after the centennial celebration of the town's founding, many of the earlier sawmills had been replaced by flour mills. The production of grain from the fertile limestone soil was the major occupation. At that time, Lewisburg was called by a contemporary writer "the key to the Buffalo Valley," the outlet for an area extending 50 miles into the interior (Mauser 1886). In that year, Lewisburg's industries included three flour mills, two knitting factories, a mower and reaper manufacturer, a nail works, planing and furniture mills, and the P. Billmeyer boat yard (Mauser 1886).

Other amenities offered by the town in 1886 included the courthouse (built in 1855), seven churches, an opera house, Bucknell University (opened in 1846), and three public schools. Total valuation of real estate in the borough at that time was \$1,465,00 (Mauser 1886).

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By 1886, the Lewisburg and Tyrone Railroad had a passenger and freight depot in town (Mauser 1886). The Shamoken, Sunbury and Lewisburg Railroad, which passed through Lewisburg between 5th and 6th Streets and connected at West Milton, had two brick depots in the borough (Mauser 1886).

The town also boasted a telegraph (Snyder 1976) and several newspapers: The Lewisburg Journal, The Lewisburg Chronicle, and The Lewisburgh Saturday News (Union County Historical Society 1968).

In the midst of rapid progress came disaster: the flood of June 1889. Although it caused a record inundation in Johnstown (Snyder 1976), destroying thousands of lives there and elsewhere, Lewisburg was one of the few fortunate towns where no lives were lost. Nevertheless, the flood swept away a number of bridges on the Susquehanna's west branch and on Buffalo Creek, including the St. Anthony Street Bridge (Chronicle, June 6, 1889; Saturday News, June 8, 1889; Road Book 1889: 242).

A new creek crossing was needed, and the existing St. Anthony Street Bridge appears in the records of the Champion Bridge Company on June 27, 1889, for a contract price of \$4,408 (p. 94). Charles Hendricks was listed as commissioner, and it is known that he was a Union County commissioner from 1888 to 1891. Robert Brown and Michael Slear were also commissioners, and James Lepley was county treasurer (Snyder 1976).

The bridge was described as a 10-panel Pratt truss, 152' long, 16' wide, and 24' in height. Capacity was "100" (presumably a live load capacity of 100 pounds per square foot). October was cited as the projected date of completion. Terms were cash upon completion and acceptance. A notation shows that the bridge was to be shipped to Lewisburg by way of the Pennsylvania and Erie Railroad (Champion Bridge Company 1889).

A list of costs for the bridge in the Champion records sums up the contract (p. 95):

Union County, Penna. 152' x 16' Bridge
1889

June 27	To Letting Exps	20
" "	" Commissions	1125
Oct. 10	" 59,300 # Materials	1439 80
" "	" Cost of Mfg.	343 85
" "	" Loading &c	14
" "	" Bolts, Paint &c	
	Scaffolding	17

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Oct. 10	To Pine Lumber	41 75
Oct. 17	" Freight	84
" "	" Haul	5
" "	" Lumber	289 60
" "	" Erection Exps.	215 00
" "	" Freight on Tools	5.00
Dec. 24	By Cash	4408
	Balance	808

The weekly Lewisburg Chronicle reported on November 7, 1889, that "the new bridge over Buffalo Creek was "well under way, and will be ready for travel within a week or two." Also in the article is evidence of the structure's original material: "It is a very neat iron structure."

A week later, the Chronicle mentioned that the Champion Bridge Company was doing a "substantial job of the Buffalo bridge" and it would be ready for crossing "in a few days" (November 14, 1889).

On November 21, the paper reported that the "bridge over the mouth of Buffalo Creek is now complete" and added that it was a "superb job" (Chronicle, November 21, 1889). The same issue announced the completion of the Lewisburg Bridge over the Susquehanna River.

Earlier that week, on November 18, the Union County Commissioners had filed a petition to have the new Buffalo Creek Bridge inspected. The county bridge "lately swept away by a flood or freshet" had been "rebuilt and reconstructed by repairing the stonework thereof, and by entering into a contract with the Champion Bridge Company of Wilmington, Ohio, for the building of the superstructure of the same for the sum of Four thousand four hundred and eight dollars...[T]he said bridge is now completed agreeably to the said contract."

The petition asked the court to appoint inspectors for the bridge. The inspectors or "viewers" named were Jos. M. Housel, S. D. Bates, and Strawbridge McCreight. After examining the bridge, the viewers filed a report November 30: "...[The bridge] is completed in a substantial and workmanlike manner complying with [in] full with the contract entered into with the Commissioners of said County...." The commissioners were authorized to pay for the bridge on December 18 (Road Book 1889: 253), and Champion noted receipt of payment on December 24 (Champion Bridge Company 1889).

2. History of the Champion Bridge Company (Builder)

The Champion Bridge Company of Wilmington, Ohio, is one of the nation's oldest bridge building firms (Miars 1972) and the only major 19th century Ohio company still in business today (Simmons 1978). Their technological and design contributions to national bridge engineering and their total volume of work sets them apart from most other similar firms (Simmons 1978).

Zimri Wall, who had been building timber bridges at least since 1860, joined with his brother Jonathan to form Z. & J. Wall and Company. Although they continued to build wooden bridges, they began experimenting with wrought iron and patented a wrought iron trussed arch bridge in 1874. During the development of the arch, Albert Bailey joined the Wall brothers' partnership. The partners manufactured and sold the arch under the name of the "Champion Wrought Iron Arch" and called the partnership "The Champion Iron Bridge and Manufacturing Company." When their manufacturing shops opened in Wilmington in 1875, Zimri Wall was erection superintendent, his brother Jonathan oversaw engineering and sales, and Bailey was shop superintendent. By July 1875, the company employed 20-25 men, who were producing bridge castings, stove bowls, and other casting work in their foundry. As the business grew and became known for its quality production, Jonathan Wall began traveling throughout Ohio, Indiana, and Kentucky selling the patent arch as well as pony and high truss bridges (Miars 1972).

The company incorporated in 1878 to manufacture and repair iron bridges, farm implements, iron fences, and other types of machinery. In February 1881, the name of the firm was changed to the Champion Bridge Company. The articles of incorporation were also modified to include steel, wood, and combination bridges as well as iron bridges (Miars 1972).

The 1880s and 1890s marked the golden era of the company. Abel C. Briggs, who was hired in 1884, was responsible for the firm's early use of steel instead of iron. The firm was one of the first to use and advertise steel for smaller highway bridges (Simmons 1978).

In 1880, Jonathan Wall developed a bridge pin that allowed equalization of tension on pairs of eyebars where one was longer than the other. Because they were hand-forged, the eyebars often were not produced to exactly the same length. Often the shorter one would take all the tension until it stretched or broke. A patent for the pin was issued in 1881 (Miars 1972).

In the mid-1880s, George Owens joined the company as a salesman and opened the large southern market. To service these clients, the firm

established a headquarters in Birmingham, Alabama. Years later, the office was moved to Atlanta, Georgia. Around 1900, another office was opened in Chattanooga, Tennessee. By 1910, the company was building bridges south of the Ohio River to the Gulf of Mexico and throughout the region east of the Mississippi (Miars 1972).

During the 1920s, most of the firm's work involved bridges, although warehouse and factory structural steel was also included. In 1935, R. J. Miars purchased the firm and formed a partnership. Thereafter, the company began diversifying into structural steel and was incorporated in 1956 (Miars 1972).

By 1972, only a small portion of the firm's total contract volume consisted of bridge construction. The majority of business had turned to the large market in fabricated structural steel (Miars 1972).

3. Relationship of the Bridge to Local Surroundings and Transportation Needs

The existing St. Anthony Street Bridge was built on abutments of the previous bridge, after the stone masonry had been repaired after a flood. The ferry that had preceded all the earlier bridges may have been at a nearby location since it was reported to be north of the mouth of Buffalo Creek.

That a ferry and a number of bridges were established at the St. Anthony Street location illustrates the importance of the crossing. When the flood of June 1889 destroyed the structure standing at that time, the new bridge was built within five months, again indicating that the site served as a key crossing in the area.

By the early 1900s, Lewisburg had become an industrial center with flour and textile mills and a chair factory. Bucknell University had also expanded (FHWA 1984 Cultural Resources Survey). The St. Anthony Street Bridge contributed to Lewisburg's continued growth in the late 1800s and early 1900s by providing a convenient crossing to the northwestern interior. Today, it offers a short cut to the community facilities along Travel Route 15 north of the borough.

4. Other Sources of Additional Information

A postcard showing the St. Anthony Street Bridge in the far distance is located in the postcard collections of the Pennsylvania Archives in Harrisburg. Postmarked September 20, 1906, the card has not been reproduced because the bridge itself is barely visible.

A 1923 postcard of Lewisburg, showing the St. Anthony Street Bridge in the distance and partially hidden by trees, appears in "Delta Place," by Doris Hartley Reed (n.d.). Again, because of remoteness of the view, it has not reproduced here.

Present-day oblique views of the bridge are retained in the files of District 3-O of the Pennsylvania Department of Transportation in Montoursville.

5. Representation in Existing Surveys

The existing St. Anthony Street Bridge is listed in the Pennsylvania Historic Resource Survey and had been determined eligible for the National Register of Historic Places. The National Register Nomination Form is included in the Preliminary Case Report for the project (Federal Highway Administration 1984).

PART II. ENGINEERING INFORMATION

A. Description of Existing and Original Structure

Photographs 1 through 22 identify representative features of the substructure and superstructure. Photographs 23 and 24 include drawings of the bridge in plan and cross-section. The numbering system used to identify the truss members is shown in Photograph 23.

In 1844, Thomas and Caleb Pratt patented the combination truss of wood and iron and, by 1850, the entire truss was made of metal. In the Pratt, the verticals are in compression except the end suspender or hip vertical, which is a tension member. The diagonals are in tension except the two at the end called endposts. The counter diagonals in the St. Anthony Street Bridge, Panels 4, 5, 6, and 7, come into action when the live load passing over the bridge causes a reversal of stress in the main diagonals. Thus, all diagonals are tension members consisting of either rods or eyebars. If no counters were used, diagonals with stress reversal would have to be heavy built-up members, similar to the top chords, to take the imposed compressive stresses.

The top lateral system forms a truss that transfers lateral forces to the endposts through the end portals and onto the bearings. Lateral loads on the lower lateral system are transferred directly to the bearings.

The pin connections used in the St. Anthony Street Bridge allow rotation for moving loads. The eyebars are reported to be loop-welded (FHWA 1984 Preliminary Case Report). Pin connections became popular in the 19th century for their ability to rotate. In the long run, however, the pins allowed movement and wear in the structure joints. Riveted connections,

which were static and thus had an advantage over the pins, began to reduce use of the pins in the 1880s (Simmons 1978).

The St. Anthony Street Bridge, shown in its entirety in Photographs 1, and 3, is a single span Pratt through truss, 150' long. It consists of 10 panels of 15' width. All joints are pin-connected. The roadway width is 15' between wooden curbs with a vertical clearance of 10' over a width of 14'-9" at the portals. The deck consists of wood 2x4s overlaid by asphalt. Steel stringers, simple supported, span between floor beams at panel points. The top chord, end posts, and verticals, with the exception of the hip verticals, are all built up from channels and plates. The hip verticals, diagonals, counters, and lower chords are made up of rods of various sizes. The top and bottom lateral system consists of rods.

Structural material, according to the 1979 Inspection Report (Pennsylvania Department of Transportation), is assumed to be wrought iron with steel repairs. The Pennsylvania Historical and Museum Commission, however, believes that it is steel (FHWA 1984 Preliminary Case Report).

Photographs 4, 6, 7, and 11 show the double portal system for transferring lateral wind forces from the upper chord to the endpost. The portal ornament (Photograph 5), a rectangular design with corner embellishments, was a design used on other Champion bridges (Miars 1972). The loop in the corner brace may also be representative of its builder.

Located at each upper panel point is the sway bracing (Photographs 8 and 9). Composed of four angles with a laced lattice web, the sway bracing acts as a strut for the upper lateral system.

The top chords of the bridge consist of built-up sections made of two 8" channels with a top cover plate and lower spacing bars (Photographs 10, 12, and 13). The lower chord consists of two bars of increasing sizes, from end to center span, with pin eyes at panel points (Photograph 18). Similarly, the main diagonals consist of two eyebars while the counter diagonals are single round rods with looped ends and turnbuckles for adjustment (Photographs 15 and 16).

The floor system consists wood 2x4s turned on edge and overlaid with a macadam-wearing surface. New steel stringers were installed in 1937. The timber deck was built in 1961. Of interest is the inverted U-bolt connection supporting the floor beams at each pinned panel point (Photographs 14, 18, and 19). The floor beams are built-up sections consisting of a web plate, flange angles, and cover plates (Pennsylvania Department of Transportation 1979).

The railing consists of a two-pipe rail connected to the verticals at the panel points. Photograph 17 shows the attachment to the bars at the end

vertical. The spacer bar, looped around each rail (shown immediately right of the connection) probably belongs at the mid-panel point.

The substructure consists of abutments constructed of large stone masonry blocks (Photographs 20, 21, and 22). Both abutments have concrete caps, and the south abutment was jacketed with concrete in 1982.

B. Construction History of the Original Structure

The division of labor among the company's directors was typical of bridge firms, which generally worked through a bid and contract system. Normally, the county engineer wrote the specifications for a new bridge. The company salesman inspected the site, decided on the most appropriate designs for the setting, and prepared a number of bids. The company shop fabricated and mass-produced the parts (Simmons 1978).

Materials and tools were typically shipped ahead by rail and, if all went well, would arrive at the nearest railroad siding before the foreman. Once at the site, the foreman hired a local construction crew, bought lumber and other supplies from local merchants, and arranged to have teamsters haul the materials to the stream location. With a team of six or eight mules, wagons would carry the bridge piece by piece to the selected site (Miars 1972). In the case of the St. Anthony Bridge, the haul was relatively short from the railroad to the construction location.

The company's bridges were usually built on scaffolding with the aid of block and tackle. Balanced tenuously on its falsework, at this stage the bridge was particularly vulnerable to floods and logs or debris drifting downstream. Most of the riveting was done in the shop because of the difficulty of driving rivets by hand under these conditions (Miars 1972).

C. Description of the Site

The existing St. Anthony Street Bridge is positioned in a northeast-southwest direction, approximately 350 feet north of the mouth of Buffalo Creek. The structure is perpendicular to the stream, which flows southeast into the west branch of the Susquehanna River.

The superstructure rests on stone masonry abutments constructed for earlier bridges. The abutments are built into moderately sloping vegetated banks. No evidence of piers exists in the creek.

The bridge provides a crossing between the built-up section of Lewisburg Borough to the south and an agricultural field owned by United Methodist Home in Kelly Township to the north. In addition, the structure offers a short-cut for motorists to the shopping areas, a hospital, and other facilities located along Travel Route 15, north of Lewisburg.

PART III. SOURCES OF INFORMATION

A. Engineering Drawings

The original drawings for the 1889 construction year are not available, according to the 1979 Inspection Report (Pennsylvania Department of Transportation). However, the engineering drawings completed for the 1979 bridge inspection are retained on microfilm in the Engineering District 3-0 Office of the Pennsylvania Department of Transportation in Montoursville, Pennsylvania. Photocopies of these drawings are included in this documentation as Photographs 23 and 24.

B. Historical Views

The only historical views of the St. Anthony Street Bridge that were uncovered were found in the Postcard Collection of the Pennsylvania Archives, Harrisburg, Pennsylvania, and in the "Delta Place" pamphlet (Reed n.d.). Both views, one from 1906 and the other from 1923, are panoramas of Lewisburg that show the existing structure in the far distance. Because of the remoteness of the views and the lack of contrast in the photographs, no details of the bridge could be determined. Enlargements would not have contributed to knowledge about the bridge.

C. Interviews

Interviews that yielded information about the St. Anthony Street Bridge were conducted with representatives of 1) the Pennsylvania Department of Transportation, 2) the Ohio Historical Society, 3) The Pennsylvania Historical and Museum Commission, and 4) local historians.

The following information and documents were provided by each source:

1. Pennsylvania Department of Transportation:

- a. "In Depth Bridge Inspection Report" (1979)
- b. Preliminary Case Report, St. Anthony Street Bridge Replacement Project, April 1985
- c. Environmental Assessment, St. Anthony Street Bridge Replacement Project, April 1985
- d. Cultural Resources Survey, St. Anthony Street Bridge, April 1984
- e. Technical Memorandums, St. Anthony Street Bridge Replacement Project, September 1984
- f. Pennsylvania Historic Resource Survey Form, St. Anthony Street Bridge
- g. Present-day oblique photographs

2. Ohio Historical Society, 1985 Velma Avenue, Columbus, Ohio 43211.
Tauni Graham, telephone interview, February 18, 1986.

Champion Eridge Company Records, 1889

3. Pennsylvania Historical and Museum Commission, Harrisburg, PA.
Dan Diebler, personal interview, April 30, 1984.

Information on historic significance of existing bridge.

4. Charles M. Snyder, author of Union City, Pennsylvania: A Bicentennial History. Lewisburg, PA: Colonial Printing House, 1976. Telephone interview, March 10, 1986.

Information on 1889 newspapers, The Lewisburg Chronicle and The Lewisburgh Saturday News, in the holdings of Bucknell University.

5. Merrill Linn, local historian, Lewisburg, PA. Telephone interview, March 10, 1986.

Information on use of Buffalo Creek and Susquehanna River for lumbering activities.

D. Bibliography

1. Primary and Unpublished Sources

- a. Columbus, Ohio. Ohio Historical Society. MSS 817/1/2. Champion Bridge Company Records, 1889, pp. 2-3, 94-95. Includes bridge dimensions and other information used for original construction contract. Lists costs of materials, commissions and shipping, as well as total price paid by Union County Commissioners.
- b. Harrisburg, Pennsylvania. Pennsylvania Archives. Manuscript Group - 213, Postcard Collection, Union County, Box 32, Lewisburg. Contains postcard titled "River View, Lewisburg," showing St. Anthony Street Bridge in far distance, with square raft-type structure near north abutment. Card is postmarked September 20, 1906.
- c. Lewisburg, Pennsylvania. Union County Court House, Prothonotary's Office. Road Book, March Sessions, 1885 to September Sessions, 1891, Union County. "Lewisburg, No. 2, Petition for Inspection of Bridge across Buffalo Creek at Lewisburg." 1889. p. 242.

- d. _____. "Lewisburg. 6. County Bridge. Order and Report of Bridge Inspection of County Bridge across Buffalo Creek at Lewisburg." December Sessions, 1889. p. 253.
- e. Lewisburg, Pennsylvania. Union County Court House, Prothonotary's Office. "Road Reports, December Sessions, 1889." Manuscript Notes.
- f. Pennsylvania Department of Transportation, "In Depth Inspection Report, Thru Truss Over Buffalo Creek, L.R. 59024 Station 15+74, Lewisburg, Union County, Pennsylvania." Unpublished report prepared by District 3-0 Bridge Inspection, January 1979.

2. Secondary and Published Sources

- a. Federal Highway Administration and Pennsylvania Department of Transportation, Cultural Resources Survey, St. Anthony Street Bridge Replacement/Rehabilitation Project, L.R. 59024, Section 007, Union County, Pennsylvania, April 1984.
- b. Federal Highway Administration and Pennsylvania Department of Transportation, Environmental Assessment, St. Anthony Street Bridge Replacement Project, L.R. 59024, Section 007, Borough of Lewisburg and Kelly Township, Union County, Pennsylvania, April 1985.
- c. Federal Highway Administration and Pennsylvania Department of Transportation, Preliminary Case Report, St. Anthony Street Bridge Replacement Project, L.R. 59024, Section 007, Borough of Lewisburg and Kelly Township, Union County, Pennsylvania, September 1984.
- d. Federal Highway Administration and Pennsylvania Department of Transportation, Technical Memorandums, St. Anthony Street Bridge Replacement Project, L.R. 59024, Section 007, Borough of Lewisburg and Kelly Township, Union City, Pennsylvania, September 1984.
- e. The Lewisburg Chronicle. No Title. Thursday, November 7, 1889, p. 1. In the microfilm collections of Bucknell University, Bertrand Library, Periodicals Section, Lewisburg, Pennsylvania.
- f. _____. No title. Thursday, November 14, 1889, p. 1.
- g. _____. No title. Thursday, November 21, 1889, p. 1.
- h. _____. No title. Thursday, June 6, 1889, p. 1.

- i. The Lewisburgh Saturday News, 1889. Although the June and November numbers were researched, the only mention of a Buffalo Creek bridge appeared in the June 8 issue, along with woodcuts of general flood views. Original newspapers are in the holdings of Bucknell University, Bertrand Library, Periodicals Section, Lewisburg, PA.
- j. Mauser, I. H. Centennial History of Lewisburg. Lewisburg, 1886.
- k. Miars, David H. "A Century of Bridges," The History of Champion Bridge Company and the Development of Industrial Manufacturing in Wilmington, Ohio." Paper prepared for the Clinton County Historical Society for presentation on March 26, 1972. Wilmington, Ohio: Cox Printing Company, 1972.
- l. Reed, Doris Hartley. "Delta Place," 1969 - 1976. Pamphlet available at Lewisburg United Methodist Homes, Lewisburg, PA, n.d.
- m. Simmons, David. "Bridge Preservation in Ohio." Ohio Cities and Villages, August 1978. Provides several paragraphs on the Champion Bridge Company and on typical construction procedures of wrought iron bridges.
- n. Union County Historical Society. Union County's Heritage. Vol. 1. Annual publication of the Union County Historical Society, PA, 1968.

E. Sources Investigated Without Result

Although the following sources were investigated, they had no historical information on the St. Anthony Street Bridge:

- 1. Bucknell University, Special Collections - University Archives, Bertrand Library, Lewisburg, PA. Doris Dysinger, Assistant, personal interview, March 11, 1986. The Davis collection of photographs and the Lewisburg history files did not yield any information.
- 2. Commissioner's Office, Union County Court House, Lewisburg, PA.
- 3. Himmelreich Memorial Library, Lewisburg, PA
- 4. National Trust for Historic Preservation, Washington, D. C. Pamela Thurber, telephone interview, February 19, 1986.
- 5. Packwood House Museum, Lewisburg, PA.

6. Pennsylvania Archives, Harrisburg, PA. Record Group (RG)-20, "General Services" File; RG-12, "Highways, Photographic Unit" file; and Manuscript Group-218, "General Photograph Collection" were investigated without result.
7. Recorder of Deeds Office, Union County Court House, Lewisburg, PA.
8. Stahl, F. Y., Milton, PA, Postcard Collections.
9. Union County Historical Society, Lewisburg, PA. Jeanette Lasansky, telephone interview, February 27, 1986.
10. Union County Journal, Lewisburg, PA. Mary Ann Fleming, Editor, telephone interview, February 27, 1986. This newspaper does not have records dating to 1889.

F. Likely Sources Not Yet Investigated

Additional numbers of The Lewisburg Chronicle and The Lewisburgh Saturday News may provide information on repairs to the bridge. If located, the Lewisburg (now Union County) Journal may yield articles on the 1889 St. Anthony Street Bridge.

G. Supplemental Material

Present-day oblique photographs of the St. Anthony Street Bridge and its setting are on file at Engineering District 3-0 of the Pennsylvania Department of Transportation, Montoursville, Pennsylvania.

H. Data Pages Preparer

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IV. PROJECT INFORMATION

A. Preparers

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B. Agency Requesting Preparation

Pennsylvania Department of Transportation, Engineering District 3-0,
Montoursville, PA. Mr. Kenneth C. Larson, Jr., P.E., District Engineer.
Mr. Thomas D. Larson, Secretary of Transportation.

